

Receiver Unit (Optical to RF Converter)

PRODUCT DESCRIPTION

WDM Receiver Module (Wavelength Division Multiplexing Optical to RF Converter) is to convert a single multiplexed optical signal to four RF signals of and one RS422 signal. This is achieved using Coarse Wavelength Division De-Multiplexer which separates the multi-wavelength optical signal back to individual optical signals. The five different optical wavelengths are 1530nm, 1550nm, 1570nm, 1590 and 1610nm for four RF signals and one RS422 signal. RF1 signal will be in 3GHz to 4GHz; RF2 signal will be in 2GHz to 3GHz, RF3 and RF4 are RF signals less than 1GHz. RS422 interface is used for sending health information.

KEY FEATURES

- Custom form factor, conduction cooled
- 4 Optical to RF converters with ± 2.5 dB gain flatness across frequency range
- Less than ± 1 dB gain flatness for 400MHz
- Maximum variation in gain across temperature is less than ± 1.5 dB
- One digital board to generate timing signal(RS422) and RS422 interface for outside connectivity
- 8-channel Optical DEMUX
- Operates on single 28V power supply
- Maximum power consumption is less than 15W
- MIL grade 38999 connectors used for outside interface
- Single mode fiber used for optical input
- SMA connectors are available for RF output signals



SPECIFICATIONS

Hardware Architecture

The hardware consists of conduction cooled chassis which houses the following sub-modules:

- Optical Processing Block
- Controller Card for monitoring and processing of health information and controlling purposes.
- Power Supply card to generate required supply voltages
- Signal conditioning module to generate/provide required power for Optical to RF module

Interfaces



- Multiplexed optical input signal comprising of 4 optical signals and RS422 timing signal.
- 4 RF output signals and RS422 timing output signal.
- RS422 interface to obtain health information.

Software / IP

- Test Software and diagnostic RTL for validation of Module

MECHANICAL

- Conduction cooled chassis with custom form factor
- Enclosure dimensions of Receiver Unit Module:
190mm X 170 mm x 100 mm

POWER CONSUMPTION

- Input voltage of 28V from external power supply.
- Maximum power consumption of the module is 15W.

ENVIRONMENTAL

- Qualification : MIL-STD-810E
MIL-STD-461E
- Temperature range : -40°C to +55°C (Storage)
-20°C to +55°C (Operational)

PART NUMBER(S)

RFGRESA-4	Wave length Division Multiplexing Receiver Unit (WDMRX)
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